EOSDIS Core System Project

Science Data Processing Segment Release and Development Plan for the ECS Project

Final

March 1995

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APPROVED BY

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Preface

This document is a formal contract deliverable with an approval code 2. As such, it does not require formal Government approval, however, the Government reserves the right to request changes within 45 days of the initial submittal or any subsequent revision. Changes to this document shall be made by document change notice (DCN) or by complete revision.

Once approved, this document shall be under the ECS Project Configuration Control. Any questions should be addressed to:

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Abstract

The Release and Development Plan satisfies the requirements for CDRL Items 048, DID 307/DV2 (Segment Release Plan) and 058, DID329/DV2 (Segment Development Plan), as specified in the Statement of Work, as a deliverable under the Earth Observing System Data and Information System (EOSDIS) Core System (ECS) Contract NAS5-60000.

This document describes the plan for development of the Configuration Items (CIs) and components of the Science Data Processing Segment (SDPS) of the ECS. The ECS is deployed as a series of releases, each providing additional functionality, in support of scheduled key EOSDIS element deployment, and performance enhancements, as planned technologies mature. Each release contains a subset of the functionality specified in ECS Functional and Performance Requirements Specification (F&PRS), with the final ECS release containing all of functionality specified for the program. This version of the SDPS Development/Release Plan includes details of the SDPS development for Interim Release 1 (IR-1) and Release A of the ECS. Subsequent versions are planned for release at the IDRs for Releases B through D.

Keywords: SDPS, Development, Release, Schedule, Configuration Item, Component, Software Lines of Code, Detailed Design, Code and Unit Test, Integration and Test

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1. Introduction

1.1 Identification

This document is submitted as required by CDRL Items 048, DID 307/DV2 and 058, DID329/DV2, as specified in the Statement of Work, as a deliverable under the Earth Observing System Data and Information System (EOSDIS) Core system (ECS) Contract NAS5-60000.

1.2 Scope

This document describes the plan for development of the Configuration Items (CIs) and components of the Science Data Processing Segment (SDPS) of the Earth Observing System (EOS) Data Information System (EOSDIS) Core System (ECS). The ECS is deployed as a series of releases, each providing additional functionality, in support of scheduled key EOSDIS element deployment, and performance enhancements, as planned technologies mature. Each release contains a subset of the functionality specified in ECS Functional and Performance Requirements Specification (F&PRS), with the final ECS release containing all of functionality specified for the program. This version of the SDPS Development/Release Plan will include details of the SDPS development for Interim Release 1 (IR-1), and Release A of the ECS. Subsequent versions are planned for release at the Incremental Design Reviews (IDRs) for Releases B through D.

This document reflects the Technical Baseline submitted via contract correspondence no. ECS 194-00343.

1.3 Purpose

This plan orchestrates the procedures defined in the ECS Software Development Plan, CDRL # 049, DID 308, into release-specific, development plans and schedules to provide guidance in preparation of the detailed planning necessary to ensure a graceful transformation from the design and prototyping activities into tangible end items ready for system integration and test. It identifies the CIs and their components; defines the resources required for component development; details the schedule for development, by release, and provides the mapping of components, to be integrated into the builds planned for deployment by release at the ECS segment level. Specific details of the component development, coding standards, integration and test, and related items can be found in the supporting documentation listed in Section 2.2, Applicable Documents.

1.4 Status and Schedule

This submittal of DID 307/DV2 and DID 329/DV2 meets the milestone specified in the Contract Data Requirements List (CDRL) of NASA Contract NAS5-60000.

1.5 Organization

This document is organized into eight sections and one Appendix, in addition to this introductory material:

Section 2 Related Documentation, contains a list of documents which influence or embellish the material contained in the SDPS Release and Development Plan.

Section 3 Development and Release Process, contains a description of the SDPS development and release process employed by this plan.

Section 4 Component Identification, contains a consolidated list of all SDPS Configuration Items (CIs) and subordinate components, how they are developed, and when they will be implemented.

Section 5 IR-1 Development Plans, contains the plans and schedules for SDPS IR-1 design, development and integration, and the mapping of the Computer Software Configuration Items (CSCIs) into SDPS Integration and Test Builds and Threads.

Section 6 Release A Development Plans, contains the plans and schedules for SDPS Release A design, development and integration, and the mapping of the Computer Software Configuration Items (CSCIs) into SDPS Integration and Test Builds and Threads.

Sections 7 through 9 will contain the plans and schedules for SDPS Releases B through C and will be added for the respective Release B through D Incremental Design Review (IDR) updates to this document.

Abbreviations and Acronyms, contains a list and definition of abbreviations and acronyms used throughout this document.

2. Related Documentation

2.1 Parent Documents

The parent document is the document from which this SDPS Release and Development Plan's scope and content are derived.

107-CD-002-xxx	Level 1 Master Schedule for the ECS Project
423-41-01	ECS Statement of Work
308-CD-001-003	ECS Software Development Plan

2.2 Applicable Documents

The following documents are referenced within this SDPS Release and Development Plan, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

194-201-SE1-001	System Engineering Plan for the ECS Project
304-CD-002-001	SDPS Requirements Specification
305-CD-002-001	SDPS Design Specification
319-CD-002-001	SDPS Integration and Test Plan
193-801-SD4-001	PGS Toolkit Requirements Specification for the ECS Project
222-TP-003-005	Release Plan Content Description

2.3 Information Documents

2.3.1 Information Documents Referenced

The following documents are referenced herein and, amplify or clarify the information presented in this document. These documents are not binding on the content of the SDPS Release and Development Plan.

194-WP-904-002	Multi-Track Development for the ECS Project

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3. Development and Release Process

This section establishes the four-step process for the development of SDPS components, integration of these components into functional threads, and integration of the functional threads into release-specific builds which are tested at the segment level. The builds are then handed off to the systems test organization for integration at the ECS system-level for each release.

This four-step process includes: 1) Identification and characterization of all SDPS end-items by subsystem, CI, and component; 2) Preparation of release-specific development schedules which map the components to development tasks and their segment integration and test threads; 3) The integration & test process, which integrates components into functional threads, which compose the segment builds and, 4) Identification of the deliverable products and their integrated components.

Step 3, the Integration & Test process, is defined for Releases IR-1 and A in the SDPS Integration and Test Plan, Volumes 1 and 2, Document number 319-CD-002-001. The other steps (1, 2, and 4 above) are described herein.

3.1 Component Identification

The purpose of component identification is to list all components necessary to build the SDPS, and to characterize them so that development plans and schedules may be developed. The resulting components list from the seven SDPS subsystems are mapped into release-specific build/thread-oriented entities. These entities provide a logical, functional implementation and integration schedule for the SDPS.

Component Identification begins once the SDPS preliminary design begins to stabilize. The Configuration Items (CIs), identified at SDR, are broken down into components, and the requirements for those components are evaluated, as trade studies are performed to determine the developmental nature of each. Components are characterized as "Off-the-Shelf" (OTS), custom-developed software/hardware, or a combination of the two.

For each component, estimates for software development efforts, OTS integration and configuration efforts, support equipment requirements, such as software development workstations, and procurement lead times are established.

3.2 Schedule Preparation

Key to the success of the SDPS development is the ability to establish schedules which facilitate component development free from delays caused by resource dependencies. Such delays can be caused by lack of personnel resources, computer hardware or software resources, and most critical, the dependency of one component to support the development of another.

This document contains preliminary development schedules for releases IR-1 and Release A of the SDPS. The document will be updated in conjunction with the Incremental Design Review (IDRs) for Releases B through D.

These schedules establish the underlying sequencing, dependencies, and relative time frames for the development activities to support the segment build/thread activities. They begin as the detailed designs stabilize and provide the migration path whereby prototypes and incrementally developed components are incorporated into the formal development and test processes. These schedules provide the basis for detailed planning, at the work package level, which monitor the development activities through the Performance Measurement System (PMS) to ensure a smooth transition into the integration and test phase of the program.

3.3 Integration and Test

As components pass the unit test phase they are submitted to the segment integration and test (I&T) organization. I&T will integrate these components in the ECS Engineering Development Facility (EDF) in Landover, Maryland, where the build/thread activities are performed. The components will be used to support functional thread development and test, leading to the integration of threads into release-specific builds. Complete details of the SDPS integration and test program through Release A may be found in the SDPS Integration and Test Plan, Volumes 1 and 2, Document number 319-003-001.

3.4 Product Delivery

The final part of the SDPS release and development plan provides traceability of the development effort from the delivered builds to components. Each release of the ECS contains increasingly more functionality, and in later releases, technology enhancements are planned.

4. Component Identification

4.1 SDPS Components

The SDPS consists of seven subsystems. Each subsystem consists of one or more Computer Software (CS) or Hardware (HW) Configuration Items (CIs), composed of a logical grouping of software or hardware components. These components consist of Commercial-Off-the-Shelf (COTS) hardware, and custom-developed and OTS software. OTS software may include COTS and/or reuse components. Reuse includes ECS component reuse, reuse of heritage code from other programs, freeware or shareware. Many of the software components are developed by combining OTS and custom-developed software, sometimes referred to as "wrappers" or "glue code", to integrate and encapsulate the OTS software. Collectively, the CIs provide the functionality identified in the SDPS Requirements Specification, Document number 304-CD-003-001. In addition, some functionality requires the integration of components from several subsystems, including some outside of SDPS. The SDPS subsystem and their CIs are listed below:

Client Subsystem (CLS)

   Desktop CSCI (DESKT)

   Workbench CSCI (WKBCH)

Interoperability Subsystem (IOS)

   Advertising Service CSCI (ADSRV)

   Advertising Service HWCI (ADSHW)

Data Management Subsystem (DMS)

   Local Information Manager CSCI (LIMGT)

   Distributed Information Manager CSCI (DIMGT)

   Data Dictionary CSCI (DDICT)

   Version 0 Interoperability Gateway CSCI (GTWAY)

   Data Management HWCI (DMGHW)

Data Server Subsystem (DSS)

   Science Data Server CSCI (SDSRV)

   Document Data Server CSCI (DDSRV)

   Storage Management Software CSCI (STMGT)

   Data Distribution Service CSCI (DDIST)

   Access and Control Management HWCI (ACMHW)

Working Storage HWCI (WKSHW)

Data Repository HWCI (DPRHW)

Distribution and Ingest Peripheral Management HWCI (DIPHW)

Ingest Subsystem (INS)

Ingest Services CSCI (INGST)

Ingest Client HWCI (ICLHW)

Planning Subsystem (PLS)

Production Planning CSCI (PLANG)

Planning HWCI (PLNHW)

Data Processing Subsystem (DPS)

Processing CSCI (PRONG)

Science Data Processing (SDP) Toolkit CSCI (SDPTK)

Science Data Preprocessing CSCI (DPREP)

Algorithm Integration and Test CSCI (AITTL)

Science Processing HWCI (SPRHW)

Algorithm Integration and Test HWCI (AITHW)

Algorithm Quality Assurance (QA) HWCI (AQAHW)

The following tables identify the components used to develop the SDPS. Table 4-1 contains the PDR baseline Developed Source Lines of Code (SLOC) estimate for each CI by Release. These estimates are reviewed and reestimated as necessary throughout the program as the SDPS design matures.

Table 4-1. SDPS CSCI SLOC Estimate by Release (1 of 2)

CI	IR-1	A	B	C/D
Desktop (DESKT)	0	2200	1000	0
Workbench (WKBCH)	0	6000	34000	0
Advertising Service (ADSRV)	0	11700	2000	1000
Local Information Manager (LIMGT)	0	0	9000	3000
Distributed Information Manager (DIMGT)	0	0	8700	3700
Data Dictionary (DDICT)	0	3350	0	1000
V0 Interoperability Gateway (GTWAY)	0	5250	0	0
Science Data Server (SDSRV)	0	34175	44700	11500
Document Data Server (DDSRV)	0	4000	4000	0
Storage Mgmt (STMGT)	0	11400	2500	2000
Data Distribution (DDIST)	0	6500	8000	2500
Ingest (INGST)	3000	20000	9000	1000

Table 4-1. SDPS CSCI SLOC Estimate by Release (2 of 2)

CI	IR-1	A	B	C/D
Production Planning (PLANG)	0	18000	8950	4830
Processing (PRONG)	0	17410	11600	13600
Science Data Pre-Processing (DPREP)	0	3000	2300	2000
Algorithm I&T (AITTL)	6900	6350	4900	500
SDP Toolkit (SDPTK)	35580	0	0	0
TOTALS:	45480	149335	150650	46630

Tables 4-2 contain the software components identified for each CSCI. Table 4-2 characterizes each Computer Software Component (CSC) by Subsystem, CSCI, Source (developed and/or OTS), Release, SLOC, Development Track, and Toolkit (TK) or IMS Increment (INC) for incrementally developed components. CSCs designated as Developed (DEV) Source Lines of Code include Third Generation Languages (C++, C, and FORTRAN), Fourth Generation Languages (Graphical User Interface Generators, SQL and Scripts), and reuse. Reuse lines of code are not included in the totals to prevent double counting; therefore, a developed CSC that includes only reuse would have zero (0) SLOCs listed in the table. Descriptions of each component can be found in the SDPS Design Specification, 305-CD-003-001.

COTS/OTS selections are not required for PDR (only make-vs.-buy decisions are due at this time). Product selections that have been made are discussed in the SDPS Design Specification, 305-CD-003-001.

Table 4-2. SDPS Computer Software Components (1 of 5)

Sub.	CSCI	CSC	Source	SLOC	Track	INC/TK	Rel
CLS	DESKT	Desktop Manager	DEV	3200	I	INC1	B
CLS	WKBCH	Earth Science Search Tool	OTS/DEV	13000	I	INC1	B
CLS	WKBCH	Product Request Tool	DEV	7500	I	INC2	B
CLS	WKBCH	Document Search Tool	OTS	0	I	INC1	B
CLS	WKBCH	Advertising Client Tool	DEV	5000	I	INC1	A,B
CLS	WKBCH	User Registration Tool	DEV	2000	I	INC1	A
CLS	WKBCH	User Preferences Tool	DEV	1500	I	INC1	B
CLS	WKBCH	Data Acquisition Tool	DEV	5000	I	INC3	B
CLS	WKBCH	E-mailer Tool	DEV	750	I	INC2	B
CLS	WKBCH	Logger/Reviewer Tool	DEV	3000	I	INC2	B
CLS	WKBCH	Data Dictionary Tool	DEV	1500	I	INC1	B
CLS	WKBCH	Comment/Survey Tool	OTS/DEV	750	I	INC2	B
CLS	WKBCH	Visualization Tool	DEV	0	I	INC1	A,B
CLS	WKBCH	News reader Tool	OTS	0	I	INC1	B
CLS	WKBCH	Hypertext Authoring Tool	OTS	0	I	INC1	B
CLS	WKBCH	V0 IMS Client	OTS/DEV	0	I	V0	A
IOS	ADSRV	AdvDBMSApplServer	DEV	11600	I	INC 1, 2	A,B,C

Table 4-2. SDPS Computer Software Components (2 of 5)

Sub.	CSCI	CSC	Source	SLOC	Track	INC/TK	Rel
CLS	WKBCH	V0 IMS Client	OTS/DEV	0	I	V0	A
IOS	ADSRV	AdvDBMSApplServer	DEV	11600	I	INC 1, 2	A,B,C
IOS	ADSRV	AdvWAISServer	OTS	0	I	INC 1	A
IOS	ADSRV	AdvhttpServer	OTS	0	I	INC 1	A
IOS	ADSRV	AdvhttpCustomComponents	DEV	1100	I	INC 1	A
IOS	ADSRV	AdvGCMDExporter	DEV	500	I	INC 1	A
DMS	LIMGT	LIM server	DEV	12000	I	INC 1, 2	B,C
DMS	LIMGT	LIM DBMS	OTS	0	I	INC 1, 2	B,C
DMS	DIMGT	DIM Server	DEV	12400	I	INC3	B,C
DMS	DIMGT	DIM DBMS	OTS	0	I	INC3	B,C
DMS	DDICT	Data Dictionary Server	DEV	4350	I	INC 1, 2	A,C
DMS	DDICT	Data Dictionary DBMS	OTS	0	I	INC 1	A,C
DMS	GTWAY	Gateway Server	DEV	5250	I	INC 1, 2	A
DMS	GTWAY	Gateway DBMS	OTS	0	I	INC 1	A
DSS	SDSRV	Data Server Interface	OTS/DEV	26175	F	N/A	A,B,C
DSS	SDSRV	Earth Science Object Class Libraries	DEV	46500	F	N/A	A,B,C
DSS	SDSRV	Earth Science Object Class Libraries - OTS	OTS	0	F	N/A	A
DSS	SDSRV	Basic Structured Class Libraries	DEV	7700	F	N/A	A,B,C
DSS	SDSRV	Data Server Administration	DEV	4000	F	N/A	A,B,C
DSS	SDSRV	Schema Generation	DEV	4000	F	N/A	A,B,C
DSS	SDSRV	Database Management	OTS	0	F	N/A	A,B,C
DSS	SDSRV	Database Management Wrapper Classes	DEV	2000	F	N/A	A,B,C
DSS	DDSRV	Document Information Search and Retrieval System	DEV	3000	F	N/A	A,B
DSS	DDSRV	Document Object Class Libraries	DEV	4000	F	N/A	A,B
DSS	DDSRV	Document Object Class Libraries Interface	DEV	1000	F	N/A	A,B
DSS	DDSRV	OTS Server Implementation	OTS	0	F	N/A	A,B
DSS	STMGT	File Management Server	OTS/DEV	7900	F	N/A	A,B,C
DSS	STMGT	Volume Server	OTS	0	F	N/A	A,B,C
DSS	STMGT	Volume Server Wrapper	DEV	2000	F	N/A	A,B,C
DSS	STMGT	Data Base Server	OTS	0	F	N/A	A,B,C

Table 4-2. SDPS Computer Software Components (3 of 5)

Sub.	CSCI	CSC	Source	SLOC	Track	INC/TK	Rel
DSS	STMGT	Storage Management Administration	OTS	0	F	N/A	A,B,C
DSS	STMGT	Storage Management Administration Interface Wrappers	DEV	6000	F	N/A	A,B,C
DSS	DDIST	Data Distribution Manager	DEV	3500	F	N/A	A,B,C
DSS	DDIST	Media Handling Software	OTS	0	F	N/A	A,B,C
DSS	DDIST	Media Handling Interface Wrapper Classes	DEV	4000	F	N/A	A,B,C
DSS	DDIST	Data Compression/Decompress Tools	OTS/DEV	1000	F	N/A	A,B,C
DSS	DDIST	Translation Tools	OTS/DEV	2000	F	N/A	A,B,C
DSS	DDIST	Data Distribution Administration Application	DEV	0	F	N/A	A,B,C
DSS	DDIST	Data Distribution Admin. Data Mgmt.	OTS/DEV	2500	F	N/A	A,B,C
INS	INGST	Ingest Client Interface	DEV	500	F	N/A	A
INS	INGST	Automated Network Ingest Client Interface	DEV	2000	F	N/A	IR1
INS	INGST	Polling Ingest Client Interface	DEV	1000	F	N/A	IR1,B
INS	INGST	Ingest Data Transfer	DEV	3500	F	N/A	A
INS	INGST	Ingest Request Processing	DEV	4250	F	N/A	A,B
INS	INGST	Ingest Data Preprocessing	DEV	12250	F	N/A	A,B
INS	INGST	Operator Ingest Interfaces	DEV	6500	F	N/A	A
INS	INGST	User Network Ingest Interface	DEV	2000	F	N/A	A
INS	INGST	Ingest DBMS	DEV	0	F	N/A	A
INS	INGST	Ingest Administration Data	DEV	1000	F	N/A	A
INS	INGST	Media Handling Software	DEV	0	F	N/A	A
INS	INGST	Viewing Tools	DEV	0	F	N/A	A
INS	INGST	Ingest File Storage Software	DEV	0	F	N/A	A
INS	INGST	Resource Administration Application	DEV	0	F	N/A	A
PLS	PLANG	Production Planning	OTS/DEV	16400	F	N/A	A,B
PLS	PLANG	Production Management	OTS/DEV	7650	F	N/A	A,B
PLS	PLANG	Planning Object Library	OTS	0	F	N/A	A,B
PLS	PLANG	Production Management DBMS	OTS	0	F	N/A	A,B
PLS	PLANG	Planning User Interface	DEV	7730	F	N/A	A,B

Table 4-2. SDPS Computer Software Components (4 of 5)

Sub.	CSCI	CSC	Source	SLOC	Track	INC/TK	Rel
DPS	PRONG	Processing Management	DEV	6370	F	N/A	A,B,C
DPS	PRONG	Processing Queue Management	OTS/DEV	8340	F	N/A	IR-1, A,B,C
DPS	PRONG	Processing Queue Envelope	DEV	9800	F	N/A	A,B,C
DPS	PRONG	Resource Management	OTS/DEV	4200	F	N/A	A,B,C
DPS	PRONG	Processing Operations Interface	DEV	6500	F	N/A	A,B,C
DPS	PRONG	QA Monitor Interface	OTS/DEV	7400	F	N/A	A,B,C
DPS	DPREP	FDF-Ephemeris Data Preprocessor	DEV	1000	F	N/A	A,B
DPS	DPREP	SDPF L0 Data Preprocessor	DEV	2000	F	N/A	A
DPS	DPREP	EDOS L0 Data Preprocessor	DEV	300	F	N/A	B
DPS	DPREP	Time and Static External Ancillary Data Preprocessor	DEV	500	F	N/A	A
DPS	DPREP	NOAA External Ancillary Data Preprocessor	DEV	2500	F	N/A	A,B,C
DPS	AITTL	Documentation Viewing Tools	OTS	0	F	N/A	IR1
DPS	AITTL	Standards Checkers	OTS/DEV	800	F	N/A	IR1,A
DPS	AITTL	Static and Dynamic Code Checkers	OTS/DEV	1200	F	N/A	A
DPS	AITTL	Data Visualization Tools	OTS/DEV	1800	F	N/A	A
DPS	AITTL	ECS HDF Visualization Tools	DEV	0	F	N/A	A
DPS	AITTL	File Comparison Utility	OTS/DEV	300	F	N/A	IR1
DPS	AITTL	Profiling Tools	OTS	0	F	N/A	IR1
DPS	AITTL	Data Server Update GUI	DEV	2000	F	N/A	A
DPS	AITTL	PGE Database Update GUI	DEV	2000	F	N/A	A
DPS	AITTL	Report Generation Tools	OTS	0	F	N/A	IR1
DPS	AITTL	Manual Staging GUI	DEV	1500	F	N/A	A
DPS	AITTL	Product Metadata Display Tool	DEV	1800	F	N/A	A, B
DPS	SDPTK	Status Message Facility Tools	DEV	4240	I	TK3,4	IR1
DPS	SDPTK	Process Control Tools	DEV	5020	I	TK3,4,5	IR1
DPS	SDPTK	File I/O Tools	DEV	3600	I	TK3,4	IR1
DPS	SDPTK	Coordinate System Conversion Tools	DEV	7590	I	TK3,4	IR1
DPS	SDPTK	Celestial Body Position Tools	OTS/DEV	2400	I	TK3,4,5	IR1
DPS	SDPTK	Constant and Unit Conversion Tools	OTS/DEV	200	I	TK4	IR1

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Table 4-2. SDPS Computer Software Components (5 of 5)

Sub.	CSCI	CSC	Source	SLOC	Track	INC/TK	Rel
DPS	SDPTK	Geo-Coordinate Transformation Tools	OTS/DEV	500	I	TK4	IR1
DPS	SDPTK	Ancillary Data Access Tools	OTS/DEV	3510	I	TK3,4,5	IR1
DPS	SDPTK	Memory Management Tools	DEV	870	I	TK3	IR1
DPS	SDPTK	Time and Date Conversions	DEV	2320	I	TK3	IR1
DPS	SDPTK	Spacecraft Ephemeris and Attitude Access Tools	OTS/DEV	550	I	TK3	IR1
DPS	SDPTK	Metadata Access Tools	DEV	2500	I	TK5	IR1
DPS	SDPTK	Math Tools (IMSL)	OTS	0	I	TK3	IR1
DPS	SDPTK	Graphics Tools	OTS	0	I	TK5	IR1
DPS	SDPTK	HDF-EOS	DEV	3000	I	IR-1	IR1

Tables 4-3 through 4-10 contain the hardware components identified to date for releases IR-1 and A for each site. Additional component tables for Releases B through D will be added at the respective IDR release of this document. All hardware components identified in Tables 4-3 through 4-10 are COTS.

Table 4-3. GSFC Site Unique SDPS Equipment Components Present at IR-1

HWCI Name/Subsystem	Component Class	Description
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts.
SPRHW / Processing	SMP Science Processor	Large SMP class science processor with SCSI / SCSI II I/F to RAID Working Storage. Minimal local system disk. OPS console with each.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.

Table 4-4. LaRC Site Unique SDPS Equipment Components Present at IR-1

HWCI Name/Subsystem	Component Class	Description
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts.
SPRHW / Processing	SMP Science Processor	Large SMP class science processor with SCSI / SCSI II I/F to RAID working storage. Minimal local disk. Integrated OPS console for each.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.

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329-CD-002-002

Table 4-5. MSFC Site Unique SDPS Equipment Components Present at IR-1

HWCI Name/Subsystem	Component Class	Description
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts. Serves as rolling storage (no archive robotics at IR-1)
SPRHW / Processing	Uniprocessor Science Workstation	Small uniprocessor workstation with SCSI / SCSI II I/F to RAID Working Storage. Minimal local system disk. OPS console.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.

Table 4-6. EDC Site Unique SDPS Equipment Components Present at IR-1

HWCI Name/Subsystem	Component Class	Description
SPRHW / Processing	SMP Science Processor	Large SMP class science processor with SCSI / SCSI II I/F to RAID working storage. Minimal local disk. Integrated OPS console for each.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for pro-duction management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.

Table 4-7. GSFC Site Unique SDPS Equipment Components Present at Release A (1 of 3)

HWCI Name/Subsystem	Component Class	Description
ADSHW / Interoperability	n/a	Software is supported by Data Management H/W for release A at GSFC. Holds true for operations as well.
DMGHW / Data Management	DBMS Server W/S (medium)	LIM server. Workstation class DBMS server systems with host attached disk. Supports Advertising, Data Dictionary & LIM.
DMGHW / Data Management	OPS W/S (small)	OPS support for DBA and LIM server administration

HWCI Name/Subsystem	Component Class	Description
DMGHW / Data Management	OPS W/S (small)	OPS support for data specialists and user support
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts.
ICLHW / Ingest	Archive Robotics	Host adapted drives. Small single tower archive robotics for L0 safe storage.
ICLHW / Ingest	Linear Magnetic Drives (Archive)	Host adapted drives with cross-strapped SCSI / SCSI II I/F to Ingest Client hosts.
ICLHW / Ingest	X-Terminal	OPS support for Data Ingest Technician(s).
ACMHW / Data Server	Server Host W/S (medium)	Access / Process Coordination single CPU server hosts with host attached disk.
ACMHW / Data Server	OPS W/S (small)	OPS support for Data Repository Management and DBA/server administration.
DIPHW / Data Server	Server Host W/S (medium)	Distribution/Ingest Server host with SCSI host adapted peripherals for ingest and distribution. SCSI RAID I/F.
DIPHW / Data Server	RAID Disk (host attached)	RAID storage for electronic distribution & "NFS" access. Temporary staging for media-based ingest and distribution.
DIPHW / Data Server	8mm Tape Stacker (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	4mm Tape Stacker (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	6250 Tape Drive	Distribution / Ingest peripheral.
DIPHW / Data Server	3490 Tape Drive	Distribution / Ingest peripheral.
DIPHW / Data Server	CD-ROM Jukebox (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	Laser Printer (network)	Print servers, network adapted to support general operations at the site.
DIPHW / Data Server	OPS W/S (small)	OPS support for Data Distribution/Ingest Technician & Mail Clerk.
WKSHW / Data Server	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to File Server hosts in Data Repository. Working Store plus FSMS host disk.

Table 4-7. GSFC Site Unique SDPS Equipment Components Present at Release A (3 of 3)

HWCI Name/Subsystem	Component Class	Description
DRPHW / Data Server	SMP DBMS Server W/S (medium)	DBMS repository server. SMP workstation class DBMS server systems (as DBMS applications COTS permits) with minimal W/S disk and SCSI I/F to RAID disk for DBMS.
DRPHW / Data Server	RAID Disk (host attached)	RAID storage for DBMS repository.
DRPHW / Data Server	SMP Server W/S (medium)	Tape repository File Server (FSMS host). SMP workstation class server systems with minimal system disk and SCSI I/F to RAID disk for Working Storage. Cross-strapped SCSI / SCSI II I/Fs to Archive Drives.
DRPHW / Data Server	Archive Robotics	Host adapted drives. Small single tower archive robotics for science & production dataset storage.
DRPHW / Data Server	Linear Magnetic Drives (Archive)	Host adapted drives with cross-strapped SCSI / SCSI II I/F to File Server Hosts.
SPRHW / Processing	SMP Science Processor	Large SMP class science processor with SCSI / SCSI II I/F to RAID Working Storage. Minimal local system disk. OPS console with each.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.
AQAHW / Processing	n/a	n/a
PLNHW / Planning	DBMS Server W/S (small)	Planning Database Server host.
PLNHW / Planning	OPS W/S (small)	OPS support for Production Planner.

Table 4-8. LaRC Site Unique SDPS Equipment Components Present at Release A (1 of 3)

HWCI Name/Subsystem	Component Class	Description
ADSHW / Interoperability	n/a	Software is supported by Data Management H/W for release A at LaRC. Holds true for operations as well.
DMGHW / Data Management	DBMS Server W/S (medium)	LIM server. Workstation class DBMS server systems with host attached disk. Supports Advertising, Data Dictionary & LIM.

HWCI Name/Subsystem	Component Class	Description
DMGHW / Data Management	OPS W/S (small)	OPS support for DBA and LIM server administration
DMGHW / Data Management	OPS W/S (small)	OPS support for data specialists and user support
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts.
ICLHW / Ingest	Archive Robotics	Host adapted drives. Small single tower archive robotics for L0 safe storage.
ICLHW / Ingest	Linear Magnetic Drives (Archive)	Host adapted drives with cross-strapped SCSI / SCSI II I/F to Ingest Client hosts.
ICLHW / Ingest	X-Terminal	OPS support for Data Ingest Technician(s).
ACMHW / Data Server	Server Host W/S (medium)	Access / Process Coordination single CPU server hosts with host attached disk.
ACMHW / Data Server	OPS W/S (small)	OPS support for Data Repository Management and DBA/server administration.
DIPHW / Data Server	Server Host W/S (medium)	Distribution/Ingest Server host with SCSI host adapted peripherals for ingest and distribution. SCSI RAID I/F.
DIPHW / Data Server	RAID Disk (host attached)	RAID storage for electronic distribution & "NFS" access. Temporary staging for media-based ingest and distribution.
DIPHW / Data Server	8mm Tape Stacker (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	4mm Tape Stacker (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	6250 Tape Drive	Distribution / Ingest peripheral.
DIPHW / Data Server	3490 Tape Drive	Distribution / Ingest peripheral.
DIPHW / Data Server	CD-ROM Jukebox (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	Laser Printer (network)	Print servers, network adapted to support general operations at the site.
DIPHW / Data Server	OPS W/S (small)	OPS support for Data Distribution/Ingest Technician & Mail Clerk.

HWCI Name/Subsystem	Component Class	Description
WKSHW / Data Server	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to File Server hosts in Data Repository. Working Store and FSMS host disk.
DRPHW / Data Server	SMP DBMS Server W/S (medium)	DBMS repository server. SMP workstation class DBMS server systems (as DBMS applications COTS permits) with minimal W/S disk and SCSI I/F to RAID disk for DBMS.
DRPHW / Data Server	RAID Disk (host attached)	RAID storage for DBMS repository.
DRPHW / Data Server	SMP Server W/S (medium)	Tape repository File Server (FSMS host). SMP workstation class server systems with minimal system disk and SCSI I/F to RAID disk for Working Storage. Cross-strapped SCSI / SCSI II I/Fs to Archive Drives.
DRPHW / Data Server	Archive Robotics	Host adapted drives. Small single tower archive robotics for science & production dataset storage.
DRPHW / Data Server	Linear Magnetic Drives (Archive)	Host adapted drives with cross-strapped SCSI / SCSI II I/F to File Server Hosts.
SPRHW / Processing	SMP Science Processor	Large SMP class science processor with SCSI / SCSI II I/F to RAID working storage. Minimal local disk. Integrated OPS console for each.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.
AQAHW / Processing	OPS W/S (small)	OPS support for Science Software QA.
PLNHW / Planning	DBMS Server W/S (small)	Planning Database Server host.
PLNHW / Planning	OPS W/S (small)	OPS support for Production Planner.

Table 4-9. MSFC Site Unique SDPS Equipment Components Present at Release-A (1 of 2)

HWCI Name/Subsystem	Component Class	Description
ADSHW / Interoperability	n/a	Software is supported by Data Management H/W for release A at MSFC. Holds true for operations as well.
DMGHW / Data Management	DBMS Server W/S (medium)	LIM server. Workstation class DBMS server systems with host attached disk. Supports Advertising, Data Dictionary & LIM.
DMGHW / Data Management	OPS W/S (small)	OPS support for DBA and LIM server administration
DMGHW / Data Management	OPS W/S (small)	OPS support for data specialists and user support
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts. Serves as rolling storage (no archive robotics at Release-A)
ICLHW / Ingest	X-Terminal	OPS support for Data Ingest Technician(s).
ACMHW / Data Server	Server Host W/S (medium)	Access / Process Coordination single CPU server hosts with host attached disk.
ACMHW / Data Server	OPS W/S (small)	OPS support for Data Repository Management and DBA/server administration.
DIPHW / Data Server	Server Host W/S (medium)	Distribution/Ingest Server host with SCSI host adapted peripherals for ingest and distribution. SCSI RAID I/F.
DIPHW / Data Server	RAID Disk (host attached)	RAID storage for electronic distribution & "NFS" access. Temporary staging for media-based ingest and distribution.
DIPHW / Data Server	8mm Tape Stacker (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	4mm Tape Stacker (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	6250 Tape Drive	Distribution / Ingest peripheral.
DIPHW / Data Server	3490 Tape Drive	Distribution / Ingest peripheral.
DIPHW / Data Server	CD-ROM Jukebox (with Drives)	Distribution / Ingest peripheral.
DIPHW / Data Server	Laser Printer (network)	Print servers, network adapted to support general operations at the site.
DIPHW / Data Server	OPS W/S (small)	OPS support for Data Distribution/Ingest Technician & Mail Clerk.

HWCI Name/Subsystem	Component Class	Description
WKSHW / Data Server	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to File Server hosts in Data Repository. Working Store plus FSMS host disk.
DRPHW / Data Server	SMP DBMS Server W/S (medium)	DBMS repository server. SMP workstation class DBMS server systems (as DBMS applications COTS permits) with minimal W/S disk and SCSI I/F to RAID disk for DBMS.
DRPHW / Data Server	RAID Disk (host attached)	RAID storage for DBMS repository.
DRPHW / Data Server	SMP Server W/S (medium)	Tape repository File Server (FSMS host). SMP workstation class server systems with minimal system disk and SCSI I/F to RAID disk for Working Storage. Cross-strapped SCSI / SCSI II I/Fs to Archive Drives.
DRPHW / Data Server	Archive Robotics	Host adapted drives. Small single tower archive robotics for science & production dataset storage.
DRPHW / Data Server	Linear Magnetic Drives (Archive)	Host adapted drives with cross-strapped SCSI / SCSI II I/F to File Server Hosts.
SPRHW / Processing	Uniprocessor Science Workstation	Small uniprocessor workstation with SCSI / SCSI II I/F to RAID Working Storage. Minimal local system disk. OPS console.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.
AQAHW / Processing	OPS W/S (small)	OPS support for Science Software QA.
PLNHW / Planning	DBMS Server W/S (small)	Planning Database Server host.
PLNHW / Planning	OPS W/S (small)	OPS support for Production Planner.

Table 4-10. EDC Site Unique SDPS Equipment Components Present at Release A

HWCI Name/Subsystem	Component Class	Description
ICLHW / Ingest	Server Host W/S (medium)	L0 Ingest Client hosts. Hosts are adapted to ECOM I/F (FDDI or ATM TBR) and ESN. Host attached disk. SCSI I/Fs to RAID working storage.
ICLHW / Ingest	RAID Disk (host attached)	Host adapted RAID disk arrays. RAID 3 / 5. SCSI / SCSI II adapted & cross strapped to Ingest Client hosts. Serves as rolling storage (no archive robotics at IR-1)
SPRHW / Processing	SMP Science Processor	Large SMP class science processor with SCSI / SCSI II I/F to RAID working storage. Minimal local disk. Integrated OPS console for each.
SPRHW / Processing	RAID Disk (host attached)	RAID working storage for science production, interim & temporary files.
SPRHW / Processing	OPS W/S (small)	Production queuing host W/S. OPS support for production management. 802.3 I/F to science processors.
AITHW / Processing	OPS W/S (small)	OPS support for Science Software I&T.

5. IR-1 Development Plans

5.1 IR-1 Development Overview

The objectives of Interim Release 1 (IR-1) are to provide ECS components to support TRMM Interface Testing as well as TRMM and EOS-AM-1 Algorithm Integration and Test. These components provide a testbed for the TRMM ground system testing and integration of science software into the DAACs. The TRMM Interface Test components and the Algorithm Integration and Test components form essentially two independent systems in that they do not interact in the IR-1 time frame.

TRMM interface testing includes testing ECS/TSDIS and ECS/SDPF interfaces for TRMM data and GDAO/ECS (GSFC) and NESDIS/ECS (GSFC) interfaces for NOAA (GDAO/NESDIS) data. TRMM components are provided by the SDPS Ingest Subsystem. Hardware and software components provide capabilities for ECS to exchange messages and transfer data with TSDIS, SDPF, GDAO, and NESDIS in support of TRMM interface testing. Message validation and limited data checking is supported. Temporary storage of messages and data is provided to validate the TRMM interfaces.

Algorithm Integration and Test includes support to integrate Version 1 science software for EOS instruments on the TRMM platform (CERES and LIS) and Beta Version science software for EOS-AM1 instruments into the DAAC configuration. SDPS components to support Algorithm Integration and Test are provided by the Data Processing Subsystem. Data Processing hardware and software components provide the capabilities to validate that the science software operates in the DAAC environment including standards checking, integration with the SDP Toolkit, and execution on the DAAC processing resources.

Components for IR-1 are developed on both an incremental and a modified formal track (see Multitrack Development White Paper (FB9404V2). Incremental components include the SDP Toolkit and Process Management software as discussed below. All other components are considered formal track with the exception that IR-1 has no formal CDR. An informal design review is envisioned for IR-1 components after PDR.

SDP Toolkit software has been developed on an incremental track, releasing incremental SCF versions to the science software developers and incorporating feedback in subsequent releases. The SCF version of the SDP Toolkit is enhanced to integrate with other SDPS DAAC components while keeping the interfaces to the science software consistent. The DAAC and SCF version are verified during IR-1 I&T to ensure consistent results in the SCF and DAAC environment.

Process management of science software execution for Algorithm I&T can be performed manually at IR-1. Limited process queuing and execution software from the Data Processing Subsystem is supplied to help facilitate testing. This software provides a basis for refining future

releases of the Data Processing Subsystem components. Support for initial manual Algorithm I&T procedures is intended to remain consistent over future releases.

5.2 IR-1 Development Schedule

Table 5-1 provides the development schedule for Release IR-1. Included in the schedule are SDPS milestone dates: PDR, IR-1 Design Review, ETR; and start and stop dates for development activities: Detailed Design (DD), Code and Unit Test (CUT), and Integration and Test (I&T) Threads and Builds. Section 5.3 presents the mapping of SDPS IR-1 components to the SDPS I&T threads and builds.

Table 5-1. IR-1 Development Schedule

Activity/Milestone	Early Start	Early Finish	Late Start	Late Finish
PDR	2/15/95	2/21/95	2/15/95	3/2/95
IR-1 Detailed Design	2/22/95	5/22/95	3/3/95	6/13/95
Processing DD	2/22/95	5/2/95	3/24/95	6/1/95
SDP Toolkit DD	2/22/95	5/2/95	3/31/95	6/8/95
Algorithm Integration and Test DD	2/22/95	5/2/95	3/31/95	6/8/95
Ingest DD	2/22/95	5/22/95	3/3/95	5/31/95
IR-1 Design Review	5/23/95	5/23/95	6/14/95	6/14/95
IR-1 Code and Unit Test	5/10/95	7/18/95	6/1/95	8/17/95
Processing CUT	5/10/95	7/18/95	6/2/95	8/10/95
SDP Toolkit CUT	5/10/95	7/18/95	6/9/95	8/17/95
Algorithm Integration and Test CUT	5/10/95	7/18/95	6/9/95	8/17/95
Ingest CUT	5/23/95	7/12/95	6/1/95	7/21/95
IR-1 SDPS Integration and Test	7/13/95	11/3/95	7/24/95	11/3/95
TRMM Check Thread	7/13/95	8/16/95	8/14/95	9/15/95
TRMM Ingest Thread	7/13/95	9/6/95	7/24/95	9/15/95
TRMM Interface Build	9/7/95	10/4/95	9/18/95	10/13/95
SDPS IR-1 Turnover 1	10/15/95	10/16/95	10/15/95	11/2/95
Process Queuing and Execution Thread	7/19/95	8/29/95	8/11/95	9/21/95
DAAC Toolkit Thread	7/19/95	8/22/95	8/18/95	9/21/95
Algorithm I&T Tools Thread	7/19/95	8/22/95	8/18/95	9/21/95
Algorithm Integration Build	8/30/95	10/10/95	9/22/95	11/2/95
SDPS ETR	11/3/95	11/3/95	11/3/95	11/3/95

5.3 IR-1 Components Mapping to Threads and Builds

Table 5-2 maps SDPS components to SDPS IR-1 I&T threads and builds. Threads provide the initial integration of components necessary to support one or more SDPS functions. Builds integrate threads or other builds and retests the combined functionality until the entire release is

integrated. For IR-1, five threads and two builds are tested. As mentioned above their is no integration in the IR-1 time frame between the TRMM Interface and Algorithm Integration and Test functionality. For a description of the threads and builds listed below, refer to the SDPS Integration and Test Plan, Volume 1 , Document number 319-003-001.

Table 5-2. SDPS IR-1 CSCI Mapping to I&T Threads and Builds

Build	Thread	CSCI
Algorithm Integration Build	DAAC Toolkit Thread	SDPTK
Algorithm Integration Build	AIT Tools Thread	AITTL
Algorithm Integration Build	Process Queuing and Execution Thread	PRONG
TRMM Interface Build	TRMM Check Thread	INGST
TRMM Interface Build	TRMM Ingest Thread	INGST

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6. Release A Development Plans

6.1 Release A Development Overview

The objectives of Release A are to provide ECS components to support the TRMM mission; Version 0 Data Migration; EOS-AM-1 and Landsat 7 Interface Testing; and EOS-AM-1 Algorithm Integration and Test.

SDPS TRMM mission support includes ingest of TRMM L0 data; ingest of ancillary data for TRMM product generation; CERES and LIS product generation, archive, and distribution; and TRMM product data management, search, and access capabilities.

Version 0 (V0) data migration includes the ability to transition V0 data sets from V0 to V1; and provide support, data management, search, and access capabilities for these data sets. A subset of V0 data sets is available at Release A. Additional data migration takes place during Release A operations.

EOS-AM-1 interface testing includes testing EDOS/ECS interfaces and ADC/ECS interfaces required for EOS-AM-1 ancillary data. TRMM components are provided by the SDPS Ingest Subsystem. Hardware and software components provide capabilities to exchange messages and transfer data. Message validation and limited data checking is supported. Temporary storage of messages and data is provided to validate the EOS-AM-1 interfaces.

Algorithm Integration and Test includes support to integrate Version 1 science software for EOS-AM-1 instruments into the DAAC. SDPS components to support Algorithm Integration and Test are provided by the Data Processing and Ingest Subsystems. Ingest hardware and software components provide the capabilities to support the interface for Algorithm Package delivery. Data Processing hardware and software components provide the capabilities to validate the science software operates in the DAAC environment including standards checking, integration with the SDP Toolkit, and execution on the DAAC processing resources.

Components for Release A are developed on both an incremental and the formal track (see Multitrack Development White Paper (FB9404V2). Incremental components include the Client, Interoperability, and Data Management Subsystem software as discussed below. In addition, a decision has been made to incorporate V0 System IMS components in Release A. The V0 System IMS components will be enhanced to integrate with ECS components. The V0 System IMS components will be replace in Release B by ECS components as necessary. Integration of the V0 components with ECS components will be presented in the Implementation Plan for V0/V1 Integration White Paper. All other components are developed on the formal track.

Client, Interoperability, and Data Management Subsystem software has been developed on an incremental development track. Development of these SDPS components is performed in increments and released in Evaluation Packages (EP). Each EP is released to a selected set of evaluators to provide feedback into the development process. A formal evaluation is conducted and results are fed back into the requirements, design and implementation process for the next

increment. Increment 1, listed in Table 6-1, provides components for EP6 including refinements to Increment 0 components released in EP4. Increment 1 also includes prototype components of the Data Server Subsystem to provided functionality required for the evaluation of Client, Interoperability, and Data Management Subsystems. Increment 2 provides components for Release A including refinements to Increment 0 and 1 components. Increment 2 components are integrated with Data Server components developed on the formal track.

6.2 Release A Development Schedule

Table 6-1 provides the development schedule for Release A. Included in the schedule are SDPS milestone dates: PDR, IR-1 Design Review, ETR; and start and stop dates for development activities: Detailed Design (DD), Code and Unit Test (CUT), and Integration and Test Threads and Builds. Section 6.3 presents the mapping of SDPS Release A components to the SDPS I&T threads and builds.

Table 6-1. Release A Development Schedule (1 of 3)

Activity/Milestone	Early Start	Early Finish	Late Start	Late Finish
PDR	2/15/95	2/21/95	2/15/95	2/21/95
SDPS Release A Detailed Design	2/22/95	8/11/95	2/22/95	8/11/95
Science Data Server DD	2/22/95	8/11/95	2/22/95	8/11/95
Document Data Server DD	2/22/95	5/22/95	5/16/95	8/11/95
Storage Management Software DD	2/22/95	7/6/95	3/30/95	8/11/95
Data Distribution DD	2/22/95	6/19/95	4/18/95	8/11/95
Ingest Services DD	2/22/95	7/31/95	3/7/95	8/11/95
Production Planning DD	2/22/95	8/11/95	2/22/95	8/11/95
Processing DD	2/22/95	8/11/95	2/22/95	8/11/95
Science Data Preprocessing DD	2/22/95	6/7/95	4/28/95	8/11/95
Algorithm Integration and Test DD	2/22/95	7/12/95	3/24/95	8/11/95
CDR	8/14/95	8/18/95	8/14/95	9/12/95
SDPS Release A Code and Unit Test	8/21/95	12/20/95	9/13/95	5/6/96
Science Data Server CUT	8/21/95	12/20/95	9/15/95	1/16/96
Document Data Server CUT	8/21/95	10/10/95	1/10/96	2/29/96
Storage Management Software CUT	8/21/95	11/7/95	11/7/95	1/24/96
Data Distribution CUT	8/21/95	10/30/95	11/9/95	1/18/96
Ingest Services CUT	8/21/95	11/16/95	10/2/95	5/6/96
Production Planning CUT	8/21/95	11/17/95	9/27/95	12/26/95
Processing CUT	8/21/95	11/16/95	9/21/95	1/11/96
Science Data Preprocessing CUT	8/21/95	10/4/95	10/19/95	12/4/95
Algorithm Integration and Test CUT	8/21/95	10/18/95	9/13/95	11/10/95
Increment 1 Development	12/13/94	8/25/95	12/27/94	9/7/95
Increment 2 Development	8/28/95	2/15/96	9/8/95	6/28/96

Table 6-1. Release A Development Schedule (2 of 3)

Activity/Milestone	Early Start	Early Finish	Late Start	Late Finish
SDPS Release A Integration and Test	10/5/95	6/28/96	11/13/95	6/28/96
Ancillary Ingest 1 Thread	10/23/95	11/9/95	12/5/95	12/22/95
AIT Thread	10/19/95	11/29/95	11/13/95	12/22/95
Ancillary Processing Thread	10/5/95	10/24/95	12/5/95	12/22/95
Resource Management Thread	10/23/95	11/21/95	11/23/95	12/22/95
Process Management Thread	10/23/95	11/21/95	11/23/95	12/22/95
Simple Prod Generation Build	11/30/95	1/10/96	12/25/95	2/2/96
SDPS Release A Segment Turnover 1	3/1/96	3/1/96	3/1/96	3/1/96
QA Thread	11/17/95	12/8/95	1/12/96	2/2/96
Production Planning Thread	11/20/95	12/27/95	12/27/95	2/2/96
Production Management Thread	11/20/95	12/27/95	12/27/95	2/2/96
Product Generation Build	1/11/96	2/13/96	2/5/96	3/7/96
Ingest Administration Thread	12/11/95	12/28/95	1/22/96	2/8/96
Ingest Toolkits Thread	12/11/95	12/28/95	1/22/96	2/8/96
Ingest Build	12/29/95	1/25/96	2/9/96	3/7/96
Data Storage Management Thread	11/8/95	12/20/95	1/25/96	3/7/96
Schema Generation Thread	12/21/95	2/9/96	1/17/96	3/7/96
Distribution Thread	10/31/95	12/18/95	1/19/96	3/7/96
Archive Administration Thread	11/8/95	12/20/95	1/25/96	3/7/96
Data Archive & Distribution Build	2/14/96	3/26/96	3/8/96	4/18/96
User Registration Thread	1/1/96	1/19/96	1/12/96	2/1/96
Advertising Service Thread	1/1/96	1/19/96	1/12/96	2/1/96
Data Dictionary Thread	1/1/96	1/19/96	1/12/96	2/1/96
EOSView Thread	1/1/96	1/19/96	1/12/96	2/1/96
Desktop Thread	1/1/96	1/19/96	1/12/96	2/1/96
Client Services Build	1/22/96	2/16/96	2/2/96	2/29/96
SDPS Increment 1 Turnover	3/1/96	3/1/96	3/1/96	3/1/96
Inventory Search Thread	1/15/96	2/21/96	2/13/96	3/21/96
Directory Search Thread	1/15/96	2/21/96	2/13/96	3/21/96
Document Search Thread	1/15/96	2/2/96	3/1/96	3/21/96
Increment 1 Evolutionary Build	2/22/96	3/20/96	3/22/96	4/18/96
Distribution Services Thread	2/5/96	3/15/96	3/8/96	4/18/96
Product Processing Request Thread	2/5/96	3/7/96	3/18/96	4/18/96
Status Request Thread	2/5/96	3/7/96	3/18/96	4/18/96
Help (Hypertext) Thread	2/5/96	3/7/96	3/18/96	4/18/96
User Services Build	3/27/96	5/7/96	4/19/96	5/30/96
SDPS Release A Segment Turnover 2	5/31/96	5/31/96	5/31/96	5/31/96
Ancillary Ingest 2 Thread	11/17/95	12/12/95	5/7/96	5/30/96

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Table 6-1. Release A Development Schedule (3 of 3)

Activity/Milestone	Early Start	Early Finish	Late Start	Late Finish
Early Landsat 7 Ingest Thread	11/17/95	12/12/95	6/4/96	6/27/96
Early AM-1 Ingest Thread	11/17/95	12/12/95	6/4/96	6/27/96
SDPS Release A Build	5/8/96	6/4/96	5/31/96	6/27/96
SDPS Release A Segment Turnover 3/ ETR	6/28/96	6/28/96	6/28/96	6/28/96

6.3 Release A Components Mapping to Threads and Builds

Table 6-2 maps SDPS components to SDPS Release A I&T threads and builds. Threads provide the initial integration of components necessary to support one or more SDPS functions. Builds integrate threads or other builds and retests the combined functionality until the entire release is integrated. Release A integrates builds tested during IR-1, EP6, and Version 0 with components developed for Release A to provide full Release A verification. For a description of the threads and builds listed below, refer to the SDPS I&T Plan, Volume 1, Release A.

Table 6-2. SDPS Release A CSCI Mapping to I&T Threads and Builds (1 of 2)

Build	Predecessor Thread/Build	CSCI
Simple Product Generation Build	Ancillary Ingest 1 Thread	INGST
Simple Product Generation Build	Ancillary Pre-processing Thread	DPREP
Simple Product Generation Build	Resource Management Thread	PRONG
Simple Product Generation Build	Process Management Thread	PRONG
Simple Product Generation Build	AIT Thread	AITTL
Simple Product Generation Build	QA Thread	PRONG
Simple Product Generation Build	Algorithm Integration Build (IR-1)	SDPTK, AITTL, PRONG
Product Generation Build	Production Planning Thread	PLANG
Product Generation Build	Production Management Thread	PLANG
Product Generation Build	Simple Product Generation Build	INGST, DPREP, PRONG, AITTL
Ingest Build	Ingest Administration	INGST
Ingest Build	Ingest Toolkit	INGST
Ingest Build	TRMM Interface Build (IR-1)	INGST
Data Archive and Distribution Build	Data Storage Management Thread	STMGT, SDSRV
Data Archive and Distribution Build	Distribution Thread	DDIST, SDSRV
Data Archive and Distribution Build	Schema Generation Thread	SDSRV
Data Archive and Distribution Build	Archive Administration Thread	STMGT, SDSRV
Data Archive and Distribution Build	Product Generation Build	INGST, DPREP, PLANG, PRONG, AITTL
Data Archive and Distribution Build	Ingest Build	INGST

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Table 6-2. SDPS Release A CSCI Mapping to I&T Threads and Builds (2 of 2)

Build	Predecessor Thread/Build	CSCI
Client Services Build	User Registration	DESKT, WKBCH
Client Services Build	Advertising Services	ADSRV, DESKT, WKBCH
Client Services Build	Data Dictionary	DDICT, DESKT, WKBCH
Client Services Build	EOSView	WKBCH
Client Services Build	Desktop	DESKT
Increment 1 Evolutionary Build	Inventory Search	SDSRV, DESKT, WKBCH
Increment 1 Evolutionary Build	Directory Search	SDSRV, ADSRV, DESKT, WKBCH
Increment 1 Evolutionary Build	Document Search	DDSRV, DESKT, WKBCH
Increment 1 Evolutionary Build	Client Services Build	DESKT, WKBCH, DDICT, SDSRV, ADSRV, DDSRV
User Services	Distribution Services	DESKT, WKBCH, SDSRV, DDIST
User Services	Distribution Processing Request	DESKT, WKBCH, SDSRV, DDIST
User Services	Status Request	DESKT, WKBCH
User Services	Help (Hypertext)	DESKT, WKBCH
User Services	Data Archive and Distribution Build	STMGT, SDSRV DDIST, INGST, DPREP, PLANG, PRONG, AITTL
User Services	Increment 1 Evolutionary Build	DESKT, WKBCH, DDICT, SDSRV, ADSRV, DDSRV
SDPS Release A Build	Ancillary Ingest 2	INGST
SDPS Release A Build	User Services Build	DESKT, WKBCH, DDICT, SDSRV, ADSRV, DDSRV, STMGT, SDSRV DDIST, INGST, DPREP, PLANG, PRONG, AITTL
(Stand Alone Thread)	Early AM-1 Ingest Interface	INGST
(Stand Alone Thread)	Early Landsat 7 Ingest Interface	INGST

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Abbreviations and Acronyms

ACMHW   Access and Control Management HWCI

ADSHW   Advertising Service HWCI

ADSRV   Advertising Service CSCI

AITHW   Algorithm Integration and Test HWCI

AITTL   Algorithm Integration and Test CSCI

AQAHW   Algorithm Quality Assurance (QA) HWCI

CDRL   Contract Data Requirements List

CERES   Clouds and Earth's Radiant Energy System

CLS   Client Subsystem

COTS   Commercial-Off-the-Shelf

CS   Computer Software

CSCI   Computer Software Configuration Item

CUT   Code and Unit Test

DAAC   Distributed Active Archive Center

DCN   Document Change Notice

DD   Detailed Design

DDICT   Data Dictionary CSCI

DDIST   Data Distribution Service CSCI

DDSRV   Document Data Server CSCI

DESKT   Desktop CSCI

DIMGT   Distributed Information Manager CSCI

DIPHW   Distribution and Ingest Peripheral Management HWCI

DMGHW   Data Management HWCI

DMS   Data Management Subsystem

DPREP   Science Data Preprocessing CSCI

DPRHW   Data Repository HWCI

DPS   Data Processing Subsystem

DSS   Data Server Subsystem

ECS	EOSDIS Core System
EDF	ECS Development Facility
EOS	Earth Observing System
EOS-AM-1	EOS Morning Crossing (Descending) Mission
EOSDIS	Earth Observing System Data Information System
ETR	Element Test Review
F&PRS	Functional and Performance Requirements Specification
GDAO	Goddard Space Flight Center Data Assimilation Office
GTWAY	Version 0 Interoperability Gateway CSCI
HW	Hardware
HWCI	Hardware Configuration Item
I&T	Integration and Test
ICLHW	Ingest Client HWCI
IDRs	Incremental Design Review
Ingest	Subsystem
INGST	Ingest Services CSCI
IOS	Interoperability Subsystem
IR-1	Interim Release -1
LIMGT	Local Information Manager CSCI
LIS	Lighting Imaging Sensor
NESDIS	National Environmental Satellite Data and Information Service
NOAA	National Oceanic and Atmospheric Administration
OTS	Off-the-Shelf
PDR	Preliminary Design Review
PLANG	Production Planning CSCI
PLNHW	Planning HWCI
PLS	Planning Subsystem
PMS	Performance Measurement System
PRONG	Processing CSCI
SCF	Science Computing Facility
SDP	Science Data Processing

SDPF	Sensor Data Processing Facility (GSFC)
SDPTK	Science Data Processing (SDP) Toolkit CSCI
SDSRV	Science Data Server CSCI
SPRHW	Science Processing HWCI
STMGT	Storage Management Software CSCI
TSDIS	TRMM Science Data and Information System
WKBCH	Workbench
WKBCH	Workbench CSCI
WKSHW	Working Storage HWCI

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